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OEE

OEE News

Leading Canadians to Energy Efficiency at Home, at Work and on the Road

FEATURES

NATIONAL DEFENCE ENERGY EFFICIENCY PROJECT Will Pay for Itself

CANADIAN FORCES BASE PETAWAWA

It's an ambitious project by any standard – a $16.2-million energy efficiency retrofit involving about 80 percent of the total floor space at Canadian Forces Base Petawawa. And it won't cost taxpayers a dime.

Launched in July 1999 under Natural Resources Canada's Federal Buildings Initiative (FBI), the project is one of a growing number of energy efficiency retrofits being financed through an innovative arrangement known as energy performance contracting. This project allows federal departments and agencies to gain the benefit of building and equipment improvements without using their own money.

In this case, the Department of National Defence (DND) and the Canadian Forces have signed an energy performance contract with Johnson Controls Ltd. The company will secure private sector financing for the project and recoup its investment through the resulting energy savings. DND and the Canadian Forces anticipate the improvements will generate annual energy savings of about $1.3 million. Ultimately, they will pay for themselves in 12 years.

In addition to reducing energy consumption and greenhouse gas emissions, the project will increase operational effectiveness, optimize the life-cycle cost of building equipment, improve indoor environments in 100 buildings and upgrade the energy management skills of base personnel.

To date, FBI-type contracts have financed retrofits in more than 5500 federal buildings, resulting in annual energy savings of approximately $24 million, significant reductions in greenhouse gas emissions, and a healthier, more comfortable work environment. For more information, visit the FBI's Web site at http://oee.nrcan.gc.ca/fbi.

Special Edition: Canada's Energy Efficiency Conference, Awards and Trade Show 2000

Welcome to this special edition of *OEE News*, with its focus on Canada's Energy Efficiency Conference, Awards and Trade Show 2000. Hundreds of delegates from across Canada attended this second national conference on energy and efficiency, held in Ottawa from October 10 to 12, 2000. Our conference coverage begins on page 6.

Natural Resources Canada | Ressources naturelles Canada
Office of Energy Efficiency | Office de l'efficacité énergétique
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Canada

R-2000 Homes Help Make Karwood Estates

AN ADULT COMMUNITY WITH A DIFFERENCE

It took the health care problem of an aging relative to spur the Hussey family of St. John's, Newfoundland, to rethink traditional approaches to community and housing development. The result is Karwood Estates – an adult living community in which the R-2000 standard of excellence has become a major selling feature.

"Seniors are like everyone else – they prefer to live independently in their own homes," says Greg Hussey, President of Karwood Contracting Ltd. "But as the older person begins to need assistance, the choices become very limited. When we faced this problem in our own family, we became convinced that the way we live and develop our communities today is completely inadequate to deal with our changing values and aging population."

So the Hussey family began looking for a solution to the housing problem faced by aging "empty nesters." The housing had to be affordable, appealing to people aged 45 to 65 and flexible to their changing needs as they grew older. Also, it would not require residents to move out of the community if they came to need nursing care. The family's solution is Karwood Estates, a full-service adult community in the town of Paradise, just outside St. John's.

One feature that sets Karwood Estates apart from other adult communities is the availability of home care services on an as-required basis. To fit all income levels, the development also offers a variety of housing types, from apartments to attached row homes to single detached dwellings, all of which are easily accessible. But one of the unique elements of the new community is its commitment to build every home to the R-2000 standard.

"As a builder, we wanted to build homes that were healthy, quiet, warm, comfortable, inexpensive, easy to operate and durable," says Mr. Hussey. "After much research into housing and home construction, the only logical choice was to construct all-R-2000 homes in our community. Our decision has been an outstanding success."

One of 17 energy efficiency programs delivered by the OEE, the R-2000 HOME Program encourages the construction of energy-efficient houses that are environmentally friendly and healthy to live in. House builders volunteer to build to the R-2000 standard, which exceeds the performance level required by building codes. The program includes an energy efficiency standard for new houses that is continually upgraded, comprehensive training and education courses for house builders, third-party testing and certification of new houses, as well as promotional activities.

R-2000 homes use only about 70 percent of the energy of a conventional house. They are widely recognized as being the most energy-efficient homes available commercially in the world today. Thousands of R-2000 homes have been built across Canada, and the technology is now being exported to foreign markets.

"R-2000 homes have given us much more than we ever expected," acknowledges Greg Hussey. "By choosing to build to the R-2000 standard, we were instantly recognized by clients as quality builders. And what we learned at the R-2000 builder training course has allowed us not only to design better homes for our clients, but also to explain all aspects of construction and the advanced materials we used in building their homes."

Most residents of Karwood Estates are so impressed with the energy efficiency of their homes that they have provided the developers with copies of their utility bills to show prospective buyers.

"You cannot imagine the pleasure we take as builders when all – not some, but all – of our R-2000 homeowners make a special effort to rave about how wonderful their new home feels. They tell us, they tell their friends, they tell our potential new clients. These people say their new R-2000 home is the most comfortable, warm, quiet, healthy, dust-free and energy-efficient home they have ever been in. The response has been so positive that we now have requests to build R-2000 homes all over town."

For more information on the R-2000 HOME Program, contact the OEE by e-mail at r.2000@nrcan.gc.ca, by fax at (613) 943-1590 or by calling 1 800 387-2000 toll-free.

Kit Helps Teach Students the AUTO$MART way

Robert Berthiaume is on a mission. He wants to make it possible for student drivers across Canada to learn good driving habits that will save them money, make for safer roads and contribute to the climate change solution. It may sound like a daunting task, but the economic and environmental paybacks will be enormous.

Mr. Berthiaume recently joined the OEE as a Program Officer for the Auto$mart Student Driving Kit. Launched in 1996, the kit is a training tool to help driving instructors teach young drivers about the financial, environmental and social benefits of fuel efficiency. His goal is to make the kit a national tool for promoting fuel-efficient, defensive driving.

"The transportation sector accounts for some 30 percent of total Canadian greenhouse gas emissions, and about half of that amount comes from cars and other light-duty vehicles," explains Mr. Berthiaume. "Research has shown that personal driving habits – when and where people drive, how often, the speed they travel, their aggressiveness on the road and so on – have a huge impact on fuel consumption. By reaching new drivers before they develop bad habits, we think the Auto$mart kit can help them make a lifelong commitment to fuel efficiency."

The kit was designed for novice drivers between the ages of 15 and 17 taking high school and commercial driver training programs. It was developed by the OEE's Auto$mart Program, in collaboration with the Traffic Injury Research Foundation and other transportation and safety organizations, and is available free of charge to high school and commercial driving instructors.

"We're working to distribute the kit as widely as possible" says Mr. Berthiaume. "It includes all the teaching resources needed to make fuel efficiency an integral part of driver training programs – information that won't be found in any other driver education resource."

A cornerstone of the kit is a fast-paced and informative 38-minute video in which a young auto mechanic named Jake takes two youths from his soccer team on a car-buying excursion. Along the way they learn the importance of fuel-efficient driving practices and proper vehicle maintenance, as well as when not to drive. At the dealership, Jake tells them what to look for when buying a car, especially its fuel efficiency.

The kit also includes an interactive CD-ROM that can be used for individualized learning, a 50-page manual that explains how driving instructors can incorporate lessons on fuel efficiency into their programs, cartoons, overheads, quizzes and other teaching resources.

"Students enjoy the materials because they are contemporary, informative and humorous," says Mr. Berthiaume. And driving instructors – like all teachers – generally welcome any materials that will help them do a better, more thorough job of training the next generation of drivers.

"We now have more than 760 instructors in New Brunswick, Ontario, Quebec and Saskatchewan using the kit," says Mr. Berthiaume. "In these four provinces alone, we've reached more than 188 500 students with the Auto$mart message. My job is to build on the program in these provinces and to expand it into other Canadian provinces this fiscal year." It is a challenge he is relishing.

For more information on the Auto$mart Student Driving Kit, contact Robert Berthiaume at (613) 995-3969 or by e-mail at rberthia@nrcan.gc.ca. The Auto$mart Web site can be found at http://oee.nrcan.gc.ca/vehicles.

The kit is a training tool to help driving instructors teach young drivers about the financial, environmental and social benefits of fuel efficiency.

Making "$ense" Across Canada

Over the last four years, more than 2000 Canadians have found ways to improve the energy savings of their companies and organizations by attending "Dollars to $ense" workshops. Presented by Natural Resources Canada's Office of Energy Efficiency (OEE), the "Dollars to $ense" program offers three distinct workshops.

Spot the Energy Savings Opportunities

The "Dollars to $ense: Spot the Energy Savings Opportunities" workshop can help your organization save energy and reduce its costs. You'll learn about energy basics, up-front opportunities and how to identify savings opportunities. The best place to look for energy savings opportunities is also the most obvious – at the point of end-use, where energy is most expensive. There are other opportunities, too. For example, an energy-efficient motor might initially cost more than a regular one, but your energy savings will more than make up for the extra cost. You and other participants will also discover how to save energy costs on fans, pumps, boiler systems and building envelopes. These and many other solutions are identified in a checklist of opportunities that you'll receive at the workshop.

Energy Monitoring and Tracking

This "Dollars to $ense" workshop helps you determine how effectively your energy resources are being used. There are three basic monitoring and tracking systems: a calibrated or computer simulation; a retrofit isolation; and a whole-building retrofit. Each system follows these same basic procedures:

- gathering information on utilities;
- finding out where and how much energy is being used;
- assessing the operation and determining where it should be changed;
- setting goals for energy savings that are attainable;
- implementing a plan of improvements; and
- monitoring energy data over a set period.

Implementing a formal monitoring and tracking system – and using it properly – can reduce energy costs by up to 15 percent. These cost savings come at a low price too, as the systems generally cost no more than five percent of the energy savings.

The Energy Master Plan

The third "Dollars to $ense" workshop focuses on developing and implementing a comprehensive energy management plan for businesses and organizations. Workshop topics include the following:

- assembling an energy management team;
- identifying and capitalizing on immediate savings opportunities;
- taking advantage of financing and insurance options;
- developing cost-saving energy management solutions; and
- participating in Canada's Climate Change Voluntary Challenge and Registry Inc. (VCR Inc.).

The OEE can even create a customized workshop for your sector, like the workshop developed for the Association of Canadian Community Colleges this past spring. For more information about the "Dollars to $ense" workshops, contact Monique Caouette of the OEE at (613) 996-2494 or e-mail to innov.gen@nrcan.gc.ca.

Upcoming "Dollars to $ense" Workshops (2001)

Spot the Energy Savings Opportunities

Vancouver		January 30
Halifax		February 14
Hull	(in French)	February 21
Winnipeg		March 1
Ottawa		March 6
Edmonton		March 14
Chicoutimi	(in French)	March 14
Moncton		March 22
Toronto		March 28
Montréal	(in French)	March 28
Fredericton		April 25
Mississauga		April 25
Québec	(in French)	April 25

The Energy Master Plan

Moncton		January 23
Oshawa		February 6
Halifax		February 13
Edmonton		February 21

Energy Monitoring and Tracking

Hamilton		January 24
Vancouver		February 20
Hull	(in French)	February 20
Winnipeg		February 28
Edmonton		March 13
Moncton		March 21
Chicoutimi	(in French)	March 13
Toronto		March 27
Montréal	(in French)	March 27
Kelowna		April 3
Mississauga		April 24
Fredericton		April 24
Québec	(in French)	April 24

For additional information on the remaining workshop dates, visit the Web site at oee.nrcan.gc.ca/workshops/index.cfm.

"Energy Efficiency is a Worthy National Objective"

Even in retirement, Dr. Peter Dyne is continuing to make an important contribution to the cause of energy efficiency in Canada, both as a consultant on energy matters to the Consumers' Association of Canada and as a member of the National Advisory Council on Energy Efficiency (NACEE).

"Energy efficiency is a worthy national objective," says Dr. Dyne. Between 1976 and 1989, he served as Director General of the Office of Energy Research and Development at the Department of Energy, Mines and Resources (now Natural Resources Canada). "The problem for investors – as well as consumers – is the relatively low cost of energy. This significantly restricts the number of investments which have a payback short enough to be cost-effective."

As Dr. Dyne sees it, consumers need help, guidance and motivation to pursue energy efficiency. He believes the Office of Energy Efficiency's (OEE's) primary job is as a facilitator between consumers, governments, builders, automobile manufacturers, utilities and other stakeholders. NACEE, in turn, acts as a sounding board for the OEE.

"The greenhouse gas issue is the most serious geopolitical problem humanity has ever faced," says Dr. Dyne. "It is essential to provide national leadership, explain to consumers what they should be doing about the problem and argue that their efforts will help. My primary interest in NACEE is in helping the OEE and the government address these very difficult issues."

Dr. Dyne holds a B.Sc. and PhD in chemistry from the University of London (King's College). His long involvement in the energy field includes stints with the National Research Council, the California Institute of Technology and Atomic Energy of Canada Ltd.

The Challenges of Energy Efficiency Are Huge – But So Are the Rewards

Paul Stevens is Director of the Vendor Finance Division at Associates Capital Limited. Why did he accept an invitation to serve on NACEE? The main reasons were the opportunities to influence energy efficiency on a broad scale and to interact with people with a wide range of interests. And he plans to use these opportunities to its fullest.

"The implications of energy use for the global climate is an obvious area of concern," says Mr. Stevens, who brings 20 years of lending experience to NACEE. "Moreover, Canada, as an energy-intensive nation, needs to maximize energy efficiency on a number of fronts to maintain its competitiveness."

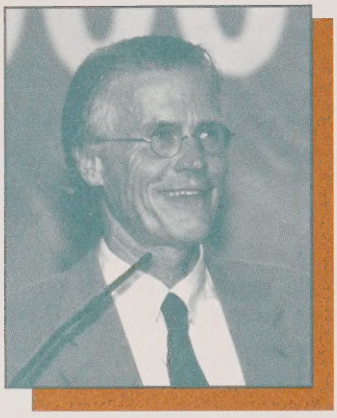
Mr. Stevens is familiar with the economic arguments in favour of energy efficiency, having worked within the Canadian banking and private placement sectors. Over the past few years, he has become involved in financing energy efficiency projects. He believes they offer significant opportunities for lenders, building owners and operators, and energy management firms alike.

"While there are significant challenges to implementing broad-based energy efficiencies, the opportunities are large and the rewards dramatic, measured by both economic and quality-of-life indicators," he says. "The OEE has the potential to serve as an important catalyst for improvement and a focal point for issues. I look forward to helping it achieve discernible and measurable improvements in Canada's energy efficiency." Mr. Stevens holds an honours B.A. in economics from York University.

Canada's Energy Efficiency Conference 2000

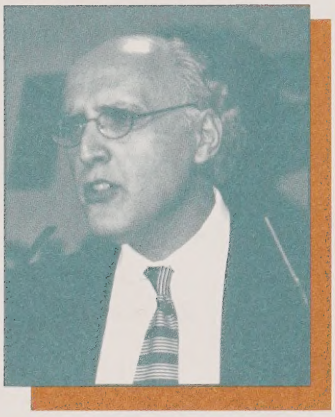
Keynote S

Issue Rallying



Passionate calls for sustainable development – particularly more efficient and environmentally responsible approaches to our use of energy – were the order of the day in the four plenary sessions held at Canada's Energy Efficiency Conference 2000.

Whether coming from North American business leaders, environmental activists, futurists or world-recognized academics, the message was essentially the same: economic and environmental goals need to be pursued in tandem to ensure a healthy planet in the 21st century.



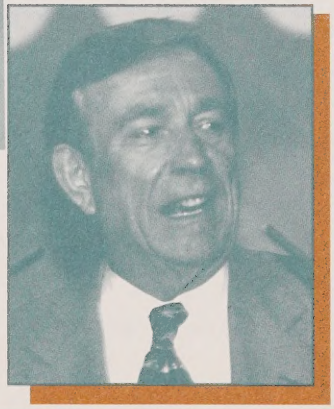
Dr. Peter Harrison, Deputy Minister of Natural Resources Canada, set the tone for the keynote speakers with his comment that "this conference comes at a very important time. We'll be talking about innovations, about change and about the future."

Speaking at the opening session on the morning of October 11, Dr. Harrison told more than 500 delegates that the conference would give "all the players involved in enhancing Canada's energy efficiency a chance to focus on common goals."

Ray Anderson, Chairman and CEO of Atlanta-based Interface, Inc., agreed. "Most of us are here because we know there is a problem," said Mr. Anderson, one of two speakers in the first plenary session. "We know that we're part of the problem. And we want to be part of the solution."

Mr. Anderson, who is endeavouring to make Interface, Inc. a completely sustainable company, noted that enormous harm had been done to the planet since the Industrial Revolution some 280 years ago. "I believe we must reinvent that industrial system and then learn to live in harmony with nature. Acting together, we can change the course of history," he said.

Mr. Anderson then outlined his view of the new industrial system – one in which technology is part of the solution instead of being the major part of the problem. He argued that the route to "abundance for all" is the productive use of all resources, not just labour. "When we have our collective head straight, the system will change. And what you have begun, for example, in energy efficiency, this humble beginning will flourish," he added.



Paul Hawken, Avi Friedman and Ray Anderson were some of the keynote speakers to share their views with conference delegates.

peakers

Call for Sustainable Development

Next to the podium was Paul Hawken, an environmentalist and best-selling author known around the world for his theory of "natural capitalism," which he explained to delegates is about natural capital, not about capitalism.

Mr. Hawken noted that industrialism has been a "tremendous success," but that the current system is extraordinarily inefficient and wasteful. "There is a tremendous abundance of efficiency to be harvested out there . . . . We're talking about radical changes." From an energy perspective alone, argued Mr. Hawken, the world could reduce the flow of "material energy" in industrial OECD economies by 90 percent over the next 50 years without reducing quality of life.

"When we're talking about a natural capital system, we're talking about one whose emphasis on radical resource productivity is one where you need more people to save more resources, not fewer people to use more resources. That's the future."

In the second plenary session, keynote speaker Robert F. Kennedy, Jr., Senior Attorney for the Natural Resources Defense Council in the United States and Chief Prosecuting Attorney for the Hudson Riverkeeper, continued the call for a balanced approach to decision making.

"One of the things that I've done over the past several years is to confront this argument that an investment in our environment is a diminishment of our nation's wealth," said Mr. Kennedy. "It doesn't diminish our wealth – it's an investment in infrastructure, the same as investing in telecommunications or road construction. And it's an investment that you have to make if you want to ensure the economic vitality of our generation and the next generation. It's about community."

Mr. Kennedy quoted a proverb from the Dakota native people in the U.S.: " 'We didn't inherit this planet from our ancestors, we borrowed it from our children.' And I would add that if we don't return to them something that is roughly the equivalent of what we received, they'll have the right to ask us some very difficult questions."

In the third plenary session, Richard George, President and Chief Executive Officer of Suncor Energy and Canada's outstanding CEO for 1999, explored the challenge of maintaining momentum in pursuing energy efficiency in good economic times.

Using examples from his company's energy-intensive oil sands operations, Mr. George stated that achieving energy efficiency is a process that prompts new thinking, challenges the status quo and continually drives our sense of innovation and creativity. He called on governments and business leaders to work closely together to promote energy efficiency across society.

"In confronting an issue as complex as climate change, we should stick to the road of pragmatism and innovation," said Mr. George. "We must pursue significant levels of greenhouse gas emission reductions, but in a way that doesn't sacrifice our economy."

The final plenary session featured a call from Avi Friedman, Director of the Affordable Homes Program at McGill University and a member of the National Advisory Council on Energy Efficiency, for Canadians to be leaders in taking action on climate change.

Dr. Friedman recounted how he and a colleague began developing a radical new approach to housing – the "Grow Home" – on the campus of McGill University in the early 1990s. Although critics universally predicted failure, Dr. Friedman noted that the Grow Home has demonstrated that "affordable housing and energy efficiency is not an oxymoron."

There is no complex solution, he concluded. "Ideas developed a long time ago are the solution. We did not need to invent the next super technology. We need to use our common sense."

Canada's Energy Efficiency Conference

2000

Awards Rec

Innovation a

Conference delegates received everything they expected and more at the gala dinner and ceremony of Canada's Energy Efficiency Awards on October 11 – fast-paced multimedia presentations, welcoming remarks via satellite from the Minister of Natural Resources Canada (NRCan), Ralph Goodale, and most important, the opportunity to join in recognizing a broad range of energy efficiency leaders.

"Close to 150 nominations were received from across Canada for this year's awards," noted Jacqueline Pelletier, who hosted the awards dinner and ceremony. "Canadians are clearly committed to improving energy efficiency in all walks of life."

Neil MacLeod, Director General of the Office of Energy Efficiency (OEE), took the stage to introduce head table guests and acknowledge the hard work of the award adjudicators – members of the National Advisory Council on Energy Efficiency, staff of the OEE and the Canadian Science Writers' Association. Mr. MacLeod also thanked Ontario Hydro Energy for sponsoring the awards for the second consecutive year.

"Ontario Hydro Energy takes pride in its continuing support of energy efficiency and recognizing the efforts of those who help make it happen," responded Mike Miller, President and CEO of Ontario Hydro Energy.

NRCan Minister Ralph Goodale addressed finalists via satellite from the Saskatchewan Science Centre in Regina. "Your work touches all aspects of our lives – our homes, our cars, our businesses, our industrial processes – pushing Canada toward an international leadership position," he said.

Then it was on to the awards presentations. As winners were announced in each of 13 categories, Dr. Peter Harrison, Deputy Minister of Natural Resources Canada, presented the awards to the applause of an appreciative audience.

The winners of the 2000 awards are as follows:

- **Student Competition**
  Brenden Marchewka, Andrew Wagner and Cliff Merritt, from the University of Saskatchewan, for a project exploring the application of variable speed refrigeration to environmental plant growth chambers
- **Student Competition – Honourable Mention**
  Mike Whitton, John Pattie and Richard Pound, from the University of Manitoba, for developing an energy management strategy for the Canadian Grain Building in Winnipeg

ognize Energy Efficiency nd Achievement

- **Public Outreach**
  Consumer Aid Services of Shawinigan, for *Ma trousse Éco-Max*
- **Media**
  "Quirks & Quarks" / CBC Radio, for a report on hydrogen fuel cells
- **Industry Process Improvement Projects – Small Energy Users**
  Crown Cork & Seal Canada Inc., for a project to recover air compressor waste heat for process heating
- **Industry Process Improvement Projects – Large Energy Users**
  Lake Erie Steel Co., for powering an air separation plant using by-product fuel
- **Industry Comprehensive Projects – Large Energy Users**
  DuPont Canada Inc., for work undertaken by its Manufacturing Energy Management Team
- **Equipment Technology – Energy-Using Equipment**
  ITT Flygt, for the energy-efficient N-pump
- **Equipment and Technology – Energy Management Technology**
  IPLC Corp., for its Intelligent Parking Lot Controller
- **Equipment and Technology – Transportation Technology**
  GFI Control Systems, Inc., for the GFI Alternative Fuel System
- **New Buildings**
  Doug Corbett Architect / TRAK Engineering Inc., for Northwood Lodge
- **Retrofit or Renovation Projects – Commercial and Industrial Buildings**
  Keen Engineering Co. Ltd., for the Telus-William Farrell Building
- **Retrofit or Renovation Projects – Government and Institutional Buildings**
  Université du Québec à Montréal, for École de technologie supérieure
- **New Housing Construction**
  Dan Blankstein / Ranson Renovations / J L Hockman Consulting Inc., for the Blankstein residence
- **Special Recognition**
  Canadian Industry Program for Energy Conservation (CIPEC), in honour of its 25th anniversary of industry-government partnership for energy efficiency

NRCan's Deputy Minister Dr. Peter Harrison (left) and Bob McDonald of CBC Radio's "Quirks & Quarks," one of the winners of Canada's Energy Efficiency Awards 2000

Canada's Energy Efficiency Conference 2000

Trade Sho Attracts

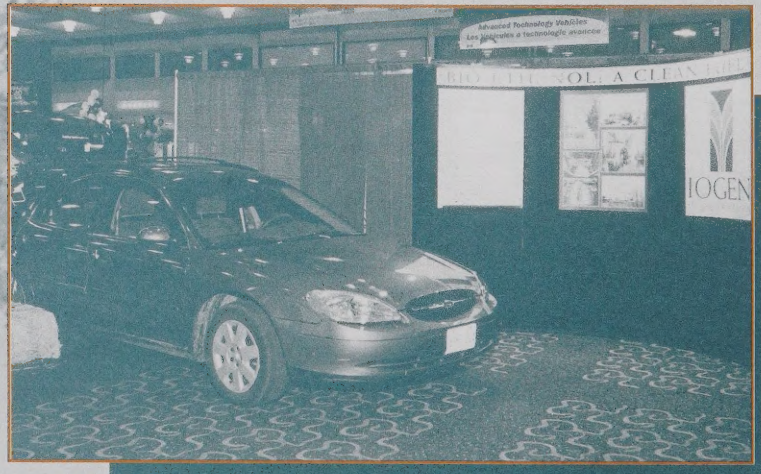
Canada's Energy Efficiency Trade Show 2000 was a hub of activity throughout the conference, as hundreds of delegates and members of the public viewed new products, cutting-edge technologies and innovative services designed to make Canada an energy efficiency leader in the new millennium.

Close to 50 exhibitors from the private and public sectors participated in the trade show, which lived up to its theme of "Showcasing Innovation and Energy Efficiency at Home, at Work and on the Road."

Two major draws at the trade show happened to be in the transportation sector – Radiance, the solar-powered car developed by the Queen's University Solar Vehicle Team, and a collection of advanced technology vehicles currently being tested by Transport Canada.

There was no mistaking the solar vehicle, with its unique low-profile design and solar array, consisting of about 3000 cells. The vehicle weighs only 245 kilograms, can achieve speeds up to 125 kilometres per hour and runs on the same amount of energy used by an ordinary toaster! After finishing second at the 1999 Australian World Solar Challenge, Radiance went on to set a new distance record for solar vehicles by travelling more than 6500 kilometres across Canada this past summer.

Representatives of the Queen's Solar Vehicle Team, a multidisciplinary group of students and faculty who volunteer their time and energy to design, build, promote and race the vehicle, were on-site to answer questions about Radiance. "We do a lot of outreach," explained student, Melodie Berg, the team's business manager.



Many energy-efficient vehicles were present at the trade show, including this one, courtesy of Iogen Corporation.

ow Hundreds!

Almost 50 exhibitors from various sectors of the economy participated in Canada's Energy Efficiency Trade Show 2000.

"We're here to meet people and answer questions, but the car really sells itself."

Transport Canada's fleet of advanced technology vehicles also drew a lot of attention. Although all of the vehicles on display at the trade show are commercially available somewhere in the world, only two – the Toyota Prius and Honda Insight – are currently sold in Canada.

"Part of our mandate at Transport Canada is to promote energy-wise choices," explained Charles Thibodeau, who manages Transport Canada's Advanced Technology Vehicles Program. "So what we do is look at available and soon-to-be-avalable technologies and how we can promote them. We test these vehicles for fuel consumption and emissions in Canadian driving conditions, and we look at whether current regulations hinder their introduction to the Canadian market."

One vehicle that drew particular attention was the MCC Smart, a futuristic-looking two-seater powered by a three-cylinder diesel engine. The Smart is only 2.5 metres long and is designed for efficient, cost-effective performance in highly populated areas.

Another technology displayed was the Volkswagen Lupo with a direct diesel injection engine, which can travel 100 kilometres on less than three litres of fuel. Visitors to the trade show also got a close-up look at the Renault Mégane, a high-performance sports car that features the first commercially available European engine with direct gasoline injection.

"Many people can see themselves driving one of these vehicles in the not-too-distant future, which I think is one of their main attractions," remarked Neil MacLeod, Director General of the OEE. "They have drawn a lot of people into the trade show, and that's been good for all the exhibitors. Overall, the show was another great success."

Tip!

Fuel efficiency should be one of your main considerations when buying a vehicle. For new cars, vans and light-duty trucks, check the EnerGuide label, which offers standardized information on the vehicle's city and highway fuel consumption and estimated annual fuel cost.

Canada's Energy Efficiency Conference 2000

Students Prove Outstan

Many students and delegates took advantage of the Energy Efficiency Career Resource Centre.

Several new features helped Canada's Energy Efficiency Conference 2000 live up to its billing as "bigger and better" than the inaugural event in May 1999, but perhaps none more so than the Student Ambassador Program.

The Office of Energy Efficiency (OEE), in partnership with the Canadian Council for Human Resources in the Environment Industry (CCHREI), presented the Student Ambassador Program, which exposed young Canadians to the challenges and opportunities in energy efficiency – and brought some youthful vigour to the conference.

Throughout the day on Wednesday, October 11, conference delegates who visited the trade show area met with 25 eager and talented post-secondary students from across Canada – Student Ambassadors who had been selected from among dozens of applicants hoping to make poster presentations at the conference.

Their work was innovative and impressive, covering topics ranging from the benefits of a holistic approach to energy education to building eco-sustainable communities. The enthusiasm of the students – many of whom were making their first visit to the National Capital Region – was infectious. The response from delegates was warm and friendly, with many stopping to chat, ask questions and leave business cards.

Rachel Haverluck, who is studying agro-ecology at the University of Manitoba in Winnipeg, described the conference as an excellent educational experience. "I'm learning a lot, even from the other Student Ambassadors," said Ms. Haverluck, whose poster presentation focused on reducing energy use when applying agricultural pesticides. "I can see there is a lot of potential for research on energy efficiency in agriculture."

Exterior doors that are in poor repair should be replaced with core-insulated, steel-clad doors, which have low air leakage and provide good insulation performance year after year. Storm doors can also boost your home's energy efficiency.

to Be ding Energy Efficiency Ambassadors

Richard Laszlo, an engineering student at Queen's University in Kingston, Ontario, agreed. "I saw the conference as an opportunity to learn from the experts," said Mr. Laszlo, whose presentation explored new applications for cogeneration technology. "Now that I'm here, I realize that energy efficiency is a big issue that affects everybody, and people are trying to do something about it."

Lyle Sweeney, who is studying mechanical engineering at the University of Alberta in Edmonton, became interested in energy efficiency almost by accident, through his research on shape memory alloys – flexible materials that return to their original shape when heated. "I find the field of energy efficiency very interesting, but I'm open-minded about my career opportunities. Anything that requires innovative solutions is interesting to me."

Similarly, Allison Bale acknowledged that energy efficiency was not the primary objective of her research on using electrical heating mats (rather than infrared lamps) to provide heat for newborn piglets – but energy savings proved to be the biggest benefit of the technology. A student in the Faculty of Engineering at the University of Manitoba, Ms. Bale saw the conference "as an opportunity to look into a possible career in this industry. It also appealed to my concern for the environment."

When they weren't presenting their work, the students took some time to explore career options by browsing through the Energy Efficiency Career Resource Centre, another partnership initiative of the OEE and CCHREI. Located adjacent to the poster presentations, the Career Resource Centre offered a wide variety of employment, educational and labour market services, including the electronic EnviroJob Board, which provided valuable information on environmental education and employment.

James Gray-Donald, an environmental student at the University of Toronto, was one of 25 Student Ambassadors from across Canada who made poster presentations for conference delegates and other trade show visitors.

Students were able to submit their résumés on-line, review profiles of potential employers and learn about new environmental career opportunities – all without leaving the trade show area.

The 25 Student Ambassadors also attended the conference's plenary and concurrent sessions and the gala dinner and ceremony of Canada's Energy Efficiency Awards.

"This is a wonderful group of young people, and I know that many of them will be true ambassadors of energy efficiency in the years ahead," remarked Maggie Johnston, the OEE coordinator for the Student Ambassador Program. "They were so full of ideas and energy. It was as thought-provoking as it was a pleasure to have the opportunity to spend time with them."

Canada's Energy Efficiency Conference 2000

Debate on Climate

Differing Viewpoints Lead

Is There a Simple Solution to the Climate Change Problem?

That was the question posed to three notable Canadians at Canada's Energy Efficiency Conference 2000. And it stirred a debate that featured both passion and logic, sprinkled with provocative asides from moderator Laurier L. LaPierre, one of Canada's most well-known political commentators and a respected champion of social justice.

The debate on climate change was a new addition to the conference – and it didn't disappoint. A big crowd flocked to the Congress Hall on the afternoon of October 12 to hear about an issue that is closely linked to energy consumption and that could have an enormous impact on the future economic prosperity and health of Canadians.

Robert McCharles, a managing partner with Dillon Consulting Limited of Sydney, Nova Scotia, led off the debate by arguing that emissions are growing because available technologies are not being used appropriately.

An energy efficiency enthusiast with more than two decades of experience in evaluating environmental problems and providing technology-based solutions, Mr. McCharles boldly stated that "technology which exists today, if employed, could reduce energy consumption by 50 percent." He went on to give examples of technologies that are now being demonstrated or commercialized but that face significant market barriers, including the availability of cheap energy and a lack of professional education and knowledge.

"The responsible answer for the long term is to focus technological solutions on a problem that could potentially mean the end of the human species," said Mr. McCharles. "Opportunities lie in technology-based investments that will clean up our own backyard. But implementation will take a serious commitment from government, the academic community and the private sector. A partnership is required [among] all three."

This call for technology-based solutions was followed by a quick lesson on the economics of climate change by Professor André Plourde of the University of Alberta's Faculty of Business. Dr. Plourde's view is that the growth in greenhouse gas emissions is due primarily to misleading market signals – in other words, prices do not reflect the full cost of goods and services.

From an economist's perspective, explained Dr. Plourde, the production and consumption of energy results in two forms of output: goods and services, and residuals. "Residuals are not good things because they are discharged into the natural environment. We need to be concerned about residuals when they give rise to damage to human health or the natural environment."

Unfortunately, consumers do not consider residuals when making production and consumption decisions – and the problem is exacerbated by the fact that "the atmosphere is owned by everyone and the problem is transboundary," Dr. Plourde said. In his view, that means a third party – namely, government – needs to be involved in assigning an economic value to residual damages.

"We need a broad range of information to place an economic value on damages," he said. "We also need estimates of the costs of measures to prevent damage. And then we need to sort out what is the level of residual damage at which the public is willing to absorb the costs of prevention."

Change: Same Conclusion

Action is Needed Now!

Dr. Plourde then suggested that "a family of instruments" is needed to allow Canada to achieve its climate change goals. "We have a responsibility to ensure that whatever measures are chosen, we get there as cheaply as possible."

The third debater was well-known environmental activist Elizabeth May, Executive Director of the Sierra Club of Canada, who hypothesized that the underlying cause of climate change is a general indifference or disregard for the environment and the planet's ecosystems.

Ms. May began by acknowledging that the nature of the climate change problem is immensely challenging. "All of our activities create the problem," she said. "All of our complex actions are impacting on a system that is even more complex."

Noting that the "stakes here are not small," Ms. May said that, to avoid a doubling of carbon dioxide in the atmosphere, the world needs to reduce greenhouse gas emissions by 60 percent – far beyond the targets agreed to by countries that signed the Kyoto Protocol, including Canada.

"We can't afford to get this wrong," warned Ms. May. "We need to act now to implement Kyoto and go beyond. The barriers to action lie not in scientific, technology or economic uncertainties. We need to change our behaviour."

After opening remarks by the three debaters, the floor was opened to questions from the audience, triggering a lively exchange of views among the panellists themselves and with conference delegates. Mr. LaPierre jumped in on a number of occasions to challenge statements, seek clarifications or simply add his own views to the debate.

At the end of the 90-minute session, Mr. LaPierre had this to say: "We live in a world of constant change, and humans seem destined to repeat our mistakes. Now, we may not have a choice in the matter. This country is an investment for us to utilize in making a better country and a better world."

From the Debate on Climate Change

"We have been trained to believe that waste is good – and we can just as easily unlearn those habits." – Elizabeth May

"Changing the way people think and act is great – but how do we get there from here?" – André Plourde

"Maybe we should make communities more responsible for their choices." – Robert McCharles

"All we have to do is act morally, and that is the end of the problem and the end of the debate." – Laurier LaPierre

Moderator Laurier LaPierre (right) and one of the debate's participants, André Plourde, engage in an animated discussion.

Debut of Building Design Charrette a Success

Energy efficiency can be an integral part of every building project provided a team-oriented approach known as "integrated building design" is adopted from the outset.

That was the conclusion of the two-day building design charrette, a new addition to Canada's Energy Efficiency Conference 2000, that gave delegates the opportunity to view first-hand the challenges and opportunities of green building design.

Beginning on the morning of October 10, three teams of design professionals began meeting at the conference. Working with design facilitators and energy-simulation specialists, and using the expertise of consultants in areas such as lighting, material selection and costing, each team developed an energy-efficient design for a specific building. Conference delegates were invited to drop in on the charrette to observe the teams in action.

If the turnout at a concurrent session that reported on the results of the design charrette was any indication, the event was deemed to be a great success by participants and delegates alike. Moderated by Martine Desbois, Manager of the New Buildings Program of Green Buildings BC, the session included a presentation by Peter Busby, principal of Vancouver-based Busby + Associates Architects and a recognized expert on designing environmentally sustainable buildings.

Using practical examples of his company's work, Mr. Busby demonstrated that "it is possible to do economical design of green buildings and good architecture at the same time." Among the projects he highlighted was the Telus-William Farrell Building, one of only about 10 in the world with a double envelope, and a new federal government building that was involved in the International Green Building Challenge.

Following Mr. Busby's presentation, architect Loughman Azar of LINE Architects presented the work of the design team for the addition to the Applied Computing and Engineering Sciences Building at Sir Sandford Fleming College in Peterborough.

Starting from a design that was three percent more energy efficient than required by the Model National Energy Code for Buildings (MNECB), the team worked through several design progressions that saw them add such features as a passive ventilation system and additional daylighting. The final design achieved the design charrette's goal of being 25 percent more efficient than the MNECB, with estimated annual energy savings of $11,000 compared to the original design. As well, the final design would cost $22,000 less to build than the original design.

"There was a lot of synergy between team members," noted Mr. Azar. "We learned a lot, and there was a good exchange of ideas."

The next presenter, Chantal Pouliot, a communications officer with Breton, Banville & Associés, explored how basic measures such as upgraded wall insulation and windows improved the energy performance of a two-storey commercial complex in Mont-Saint-Hilaire to the point where it was 52 percent more efficient than required by the MNECB.

"In the end, the building that was designed would cost $10,000 a year to operate, compared to about $20,000 for the base building," said Ms. Pouliot, adding that the multidisciplinary team approach resulted in "more efficiency and effectiveness in the design process."

Doug Pollard of the Canada Mortgage and Housing Corporation was the facilitator for the third team, which tackled the challenge of upgrading the design of a multi-unit residential building to be constructed in Halifax. Starting from a design that was 12 percent better than the MNECB, the team selected "state of the shelf" technologies and approaches to work toward the 25 percent target. For example, the building was re-oriented on the site, windows were upgraded, extra insulation was added, and improvements were made to the building's mechanical systems.

"We decided to inch our way toward our target," explained Mr. Pollard. "We tried to demonstrate that even when you follow a very basic design process, you can achieve these savings. Taking a more holistic approach, you could go well beyond what we achieved."

Martine Desbois wrapped up the concurrent session by thanking Mr. Busby and all team participants for sharing their knowledge and expertise. "Although the integrated design process can seem to be long and cumbersome, it's important to remember that a lot of decisions are made earlier in the process than usual, which saves money in the long run," she concluded.

CIPEC

Celebrates 25 Years of Energy Efficiency Leadership

Canada's Energy Efficiency Conference 2000

Warren Holmes, Chair of the CIPEC Executive Board, speaks to trade show attendees to celebrate the 25th anniversary of CIPEC.

The year 2000 is the dawn of a new millennium, but for the Canadian Industry Program for Energy Conservation (CIPEC), it's also an important anniversary. CIPEC turned 25 in May, and what better place to celebrate this milestone than at Canada's Energy Efficiency Conference and Trade Show?

CIPEC is a unique industry-government alliance established in 1975 to encourage effective voluntary actions to reduce industrial energy use, strengthen Canada's economic performance and contribute to a cleaner, healthier environment. CIPEC industries have essentially stabilized their greenhouse gas emissions at 1990 levels, despite a 20.6 percent growth in production between 1990 and 1998.

Conference organizers made sure that CIPEC was front and centre throughout the conference's two and a half days. For example, Canada's Energy Efficiency Trade Show featured "CIPEC Boulevard," a section reserved for industry exhibitors. It was here that delegates gathered on the afternoon of Wednesday, October 11, to celebrate the CIPEC success story.

Warren Holmes, Senior Vice-President of Canadian Mining Operations at Falconbridge Limited and Chair of the CIPEC Executive Board, reminded delegates that CIPEC participants had improved industrial energy intensity per unit of production by 1.3 percent between 1990 and 1998, roughly the amount of energy required to heat 40 percent of Canadian homes for over a year.

"And the movement is growing," added Mr. Holmes. "It's not really the past 25 years we are celebrating, but the tremendous level of commitment by government and industry."

Later in the day, at Canada's Energy Efficiency Awards gala dinner, CIPEC was presented with a special award recognizing its contribution to energy efficiency improvements throughout the Canadian manufacturing and mining industries.

The award was accepted by Mr. Holmes and Peter Torbet, General Manager of Madawaska Hardwood Flooring and Chair of the CIPEC Task Force Council. CIPEC Task Force chairs in the audience – both past and present – were also invited to stand to accept the congratulations of some 500 delegates at the dinner.

CIPEC is often cited as a model of industry-government partnership and as confirmation that energy efficiency that results in greenhouse gas reductions can be achieved through voluntary approaches. More information on CIPEC is available through the OEE's Web site at http://oee.nrcan.gc.ca.

When using your oven, turn it off a few minutes before cooking is complete; the heat already in the oven will finish the job.

Successful Partnership Leads to Increased Energy Efficiency for School Boards

More than 100 school boards across Canada are now registered as Energy Innovators. As a result, they are at the forefront of institutional energy efficiency – largely because of a successful partnership initiative between Natural Resources Canada and the Canadian School Boards Association (CSBA).

"We have been working with the CSBA for the past three years to promote the benefits of energy efficiency at school board facilities," says Francine Dumont, an Energy Innovators Program Officer with the Office of Energy Efficiency. "The Association's Energy Efficiency Advisory Group educates us on the technical and awareness needs of school boards. The information it provides allows us to tailor our services to the school boards' needs and provide incentive funding, which allows them to implement many retrofit projects."

As a result of this partnership approach, energy efficiency activity in the school board sector has increased substantially in the past two years, notes Ms. Dumont. Since April 1998, school boards have received $2.9 million in funding from the Energy Innovators Plus initiative, which offers a contribution of up to 25 percent toward the cost of eligible pilot projects when the organization has firm plans to replicate the project in other facilities.

The CSBA's Energy Efficiency Advisory Group is made up of facility managers, trustees and representatives of provincial school board associations. Its current members are Ron Marshall (Chair) of Manitoba Hydro, CSBA President Kathy LeGrow, Dr. James Hearn of the Newfoundland and Labrador School Boards Association, Robert Clow of the Charlottetown Eastern School District, Paul Wilton of the Cape Breton–Victoria Regional School Board, Colin O'Shea of the Western Quebec School Board, Ernest Garbutt of the Eastern Townships School Board, Udo Friesen of the Ottawa-Carleton District School Board, Lloyd Wildeman of the Saskatchewan School Trustees Association, George Walker of the Alberta School Boards Association, John Hickling of the Okanagan-Skaha School District No. 67 and Christopher Noyes of the CSBA.

For more information on energy efficiency for school boards, please contact Sadettin Yilmaz by phone at (613) 996-4643, or by e-mail at syilmaz@nrcan.gc.ca.

Tip!

Consider insulating your hot water tank (consult your utility first, especially for gas heaters). In addition, insulate water pipes that run through unheated areas.

CROWN CORK & SEAL'S Elements of Energy Use

Crown Cork & Seal Canada, Inc. – the largest rigid metal packaging company in Canada – recognizes that reducing the energy content of its products will put the company in a more competitive position. This Industrial Energy Innovator produces both tin-plated steel and aluminum containers for the food and beverage markets. The equipment used to manufacture these products is capital intensive, highly automated and requires considerable energy input.

Crown Cork & Seal's energy efficiency action plan is based on the following four elements of energy consumption:

- the steel content of production;
- the aluminum content of production;
- the electricity consumed in processes; and
- the natural gas consumed by production and plant facilities.

The company intends to measure its performance based on these four elements per unit of can production.

Competitive pressures have been driving down industry prices, forcing a series of product innovations and design changes aimed at reducing the metal content of its packages. Steel and especially aluminum are large energy consumers per kilogram produced. Reducing metal content is a major part of Crown Cork & Seal's energy efficiency efforts.

The steel portion of the business improved its energy performance ratio. Crown Cork & Seal has been able to reduce the amount of steel it uses to make steel cans. Can production increased by 5.4 percent with only a 4.9 percent increase in the amount of steel used.

The aluminum lines were fully converted to produce aluminum beverage cans with a reduced-diameter top by the beginning of 1999, resulting in an increase in output of 12 percent over 1998. Although production levels increased, Crown Cork & Seal noted that its natural gas consumption decreased by 1.1 percent and its electrical energy intake was reduced by 4.7 percent.

An innovative infrared drying pilot project at one of Crown Cork & Seal's Toronto-area plants is also showing positive results. The project resulted in a 12-percent improvement in energy efficiency over the previous year during the drying of the aluminum beverage cans, with natural gas savings estimated to be around 85 000 m^3. The company is also looking at a second infrared project at its steel tinplate processing plants, which are very energy intensive.

A heat exchanger project was recently completed at Crown Cork & Seal's Calgary plant that uses waste heat from an air compressor to heat water for washing cans. Other facilities have been engaging in lighting retrofits. The Chatham plant completed a project to allow indoor refuelling of its natural-gas-powered forklift trucks. The first installation of its kind in North America, it paid for itself in the first year from the energy saved by avoiding the need to open the large bay doors.

HVAC upgrades at Crown Cork & Seal's corporate head office and at its Toronto plant include the installation of a new two-stage air-conditioning unit. The smaller unit can run under lower loads during off-peak times, while both units will operate during full-load periods. The new unit is computer controlled for optimum performance. Immediate plans include automating the air compressors so that the units are turned off when not required, saving Crown Cork & Seal further energy costs.

Crown Cork & Seal is beginning to understand more about where the company is using energy through an energy monitoring project that is expected to be gradually expanded to its other Canadian plants in the coming years.

MID-SIZED TORONTO HOTEL DEMONSTRATES BENEFITS OF

It sounded almost too good to be true. But when Ali Bassit was told that an energy efficiency retrofit of the 296-room hotel he manages near Pearson International Airport in Toronto would reduce its energy costs by 20 percent, and that the project could be paid for by using the energy savings, he jumped at the opportunity.

Energy-efficient retrofits like this one can reduce operating costs while contributing to Canada's climate change goals.

He is glad he did. And so are CP Hotels, the franchisee of the Four Points Hotel (Toronto Airport), and Enbridge Integrated Building Technologies Inc., the energy service company that undertook the retrofit project. In fact, the Four Points Hotel retrofit could serve as an example for owners and operators of hospitality facilities across Canada.

With annual energy bills of $460,500, the mid-sized Four Points Hotel offered numerous opportunities for simple yet effective energy efficiency improvements. So in May 1998, Mr. Bassit and an energy management team embarked on an energy efficiency program. About a year later, with assistance from the Office of Energy Efficiency's (OEE's) Energy Innovators Initiative, the $700,000 retrofit began.

Consumption of electricity accounted for about 73 percent of the hotel's energy costs, so lighting was a good place to start. Each of the hotel's 2700 lights – in guest rooms, corridors, meeting rooms, the lobby, restaurant and indoor parking lot – were converted to high-efficiency lighting. Despite the fact that far less energy is being consumed by the new technology, light levels in the retrofitted areas have been maintained and, in some cases – as in the indoor parking garage – have actually increased.

On the advice of the energy service company, the Four Points Hotel also decided to replace its conventional boiler with a high-efficiency unit. The results were noticeable at once.

"Before, when I visited the boiler room, I could feel the heat coming from the unit," says Mr. Bassit. "Now, I cannot because the new unit does not give off waste heat. The boiler room is not hot anymore."

Similarly, five 20-year-old heating, ventilating and air-conditioning units located on the hotel's roof were replaced with more modern, efficient units fitted with economizers that optimize the building's ventilation. In addition to the energy savings, the new equipment has reduced maintenance costs and improved overall reliability – an important consideration for guest comfort and satisfaction.

ENERGY EFFICIENCY

One of the most important upgrades was the installation of a LONWorks computerized system that allows for central control of the hotel's energy management either by the energy service company or the hotel's maintenance staff. Guests can still adjust their thermostats, but only between 19°C and 24°C. This temperature range offers guests reasonable control over their comfort but eliminates the potential for wild temperature swings within rooms.

The most innovative aspect of the control system, however, is its wireless communication link between the main building and the parking garage. This feature gives the garage the benefit of sharing the same control system as the main building without the additional costs that would normally be required to run a physical cable connection between the buildings.

Mr. Bassit would have been happy with the 20-percent energy savings promised from the project, but he is delighted to report that the annual savings to date are an impressive 35 percent. That translates into 1 531 530 equivalent kilowatt-hours of energy, made up of 653 000 kWh of electrical savings and 878 530 equivalent hours of gas savings. This came to $52,680 in savings in the first seven months after project completion.

The Four Points Hotel project is a good example of the opportunities for extensive savings in the hospitality sector. Energy-efficient retrofits like this one can reduce operating costs while contributing to Canada's climate change goals. For more information on how the OEE and its Energy Innovators Initiative can help, please contact Marlene Weinheimer by phone at (613) 943-0643, by fax at (613) 947-4121 or by e-mail at mwein@nrcan.gc.ca.

CONGRATULATIONS, NOVOTEL!

Novotel Canada Inc. recently became the first commercial Energy Innovator from the hospitality sector to be recognized as a Silver Champion Reporter by Canada's Climate Change Voluntary Challenge and Registry (VCR Inc.).

Novotel Canada Inc., part of the Accor Business and Leisure Hotel Group headquartered in Paris, France, is now committed to achieving Gold Champion Reporter status - the highest level in the VCR Inc. reporting system.

In addition, Accor plans to extend its Energy Innovators employee awareness and training program to all of its 230 properties worldwide.

It is this kind of commitment that sets Energy Innovators apart from the competition and gives them recognition as energy efficiency leaders in Canada and around the world.

ACCC

ASSUMES ENERGY EFFICIENCY LEADERSHIP ROLE

Canada's colleges are dynamic, progressive institutions that are continually evolving to meet the economic and social needs of the communities they serve. So it is no surprise that they have emerged as leaders in the field of energy efficiency and action for climate change.

The Association of Canadian Community Colleges (ACCC) – the national umbrella organization for community colleges – has entered into an innovative strategic partnership with the Office of Energy Efficiency (OEE) to promote energy efficiency as a means of mitigating the environmental impacts of its member institutions. According to Energy Innovators Initiative Program Officer, Sadettin Yilmaz, the partnership has already shown excellent results since its launch in 1998.

"The ACCC has established a National Energy Efficiency Steering Committee that brings together a unique combination of skills and experience to provide peer group influence and leadership to the college sector," explains Mr. Yilmaz. "We're working closely with the steering committee and with officials of Canada's Climate Change Voluntary Challenge and Registry Inc. (VCR Inc.) to stimulate interest in energy efficiency and to encourage ACCC members to capitalize on one another's expertise and best practices." VCR Inc. is a not-for-profit corporation whose purpose is to encourage organizations from all sectors of the economy to voluntarily reduce greenhouse gas (GHG) emissions.

Partnership initiatives to date include an extensive promotional campaign to recruit colleges to the Energy Innovators Initiative and to VCR Inc., which acts as the public registry for all action plans and progress reports. The OEE has worked with the ACCC over the past year to assist the college community with the submission of Champion Level reports to the VCR Inc. registry. In particular, the OEE has taken steps to ensure that as many of the reports submitted by ACCC member institutions as possible meet Gold Champion Level Reporter requirements. VCR Inc. posts these reports on its Web site to publicize the various programs and actions that ACCC members have undertaken to reduce GHG emissions from their operations.

As a result of these and other efforts, 19 colleges have joined the Energy Innovators Initiative in the past two years, for a total of 65. More importantly, seven colleges have attained Gold Champion Level Reporter status with VCR Inc. There are only 49 Gold Champion Level Reporters in Canada. One college has achieved Silver Champion Level Reporter status.

"The quality energy management action plans developed by these institutions can serve as templates for community colleges and others," says Deanna Douglas of Langara College in Vancouver, British Columbia, one of VCR Inc.'s Gold Level Champion reporters. As Chair of the Energy Efficiency Steering Committee, Ms. Douglas has played an important role in encouraging ACCC members to reduce both energy consumption and GHG emissions.

While significant progress has been made early in the partnership initiative, all parties agree that much remains to be done. To maintain the momentum in this sector, representatives of VCR Inc., the OEE and the ACCC meet regularly in Ottawa to review progress and plan future initiatives.

For more information on the OEE–ACCC partnership, contact Sadettin Yilmaz of the OEE by phone at (613) 996-4643 or by e-mail at syilmaz@nrcan.gc.ca. You may also contact Ruth Watson, Director of the Energy Efficiency Program at the ACCC by phone at (613) 746-6089 or by e-mail at rwatson@accc.ca. For information on VCR Inc. and its Champion Reporting System, visit its Web site at www.vcr-mvr.ca, or contact Brian Rawson, VCR Inc. Registry Analyst, by phone at (613) 565-5151 or by e-mail at brawson@vcr-mvr.ca.

Appliances Show Remarkable IMPROVEMENT in Energy Efficiency

Exceptional progress has been made in improving the energy efficiency of major household appliances sold in Canada, according to a new publication produced by the Office of Energy Efficiency (OEE)'s National Energy Use Database (NEUD) initiative.

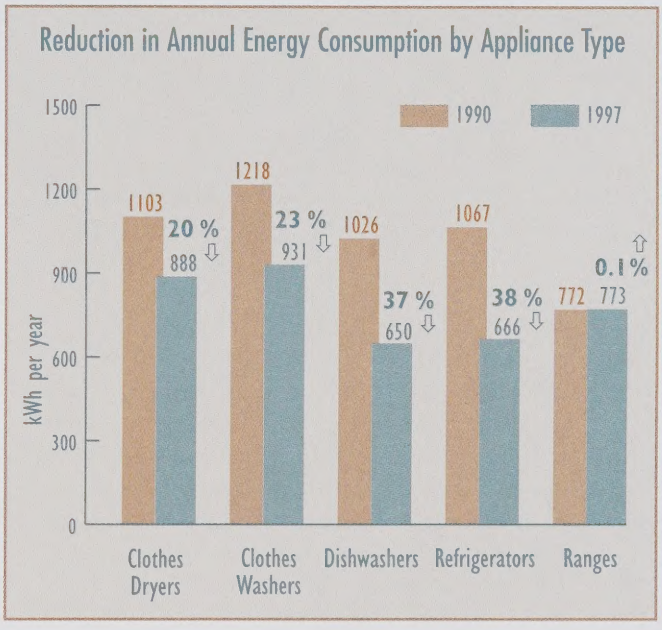
The report, entitled *The Energy Consumption of Major Household Appliances Shipped in Canada – Trends from 1990 to 1997*, analyses improvements in the energy consumption of five major household appliances: refrigerators, ranges, dishwashers, clothes washers and clothes dryers. Although data was collected for freezers, there was insufficient information to include in the report.

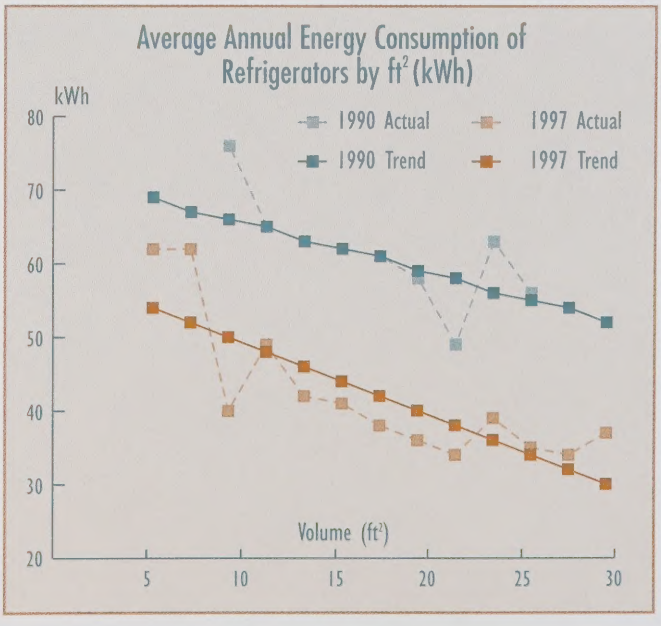
"All types of major household appliances showed significant improvements in energy efficiency between 1990 and 1997, with the exception of ranges, which remained substantially unchanged," notes Linda Yuen, an OEE economist. "These improvements are largely the result of research and development carried out by appliance manufacturers, prompted in part by the minimum performance requirements contained in the *Energy Efficiency Regulations*."

According to the NEUD analysis, the biggest energy efficiency gains were achieved with refrigerators, which, on average, consumed 38 percent less electricity in 1997 than in 1990. In the 1997 model year, 99 percent of refrigerators used less than 50 kilowatt-hours of electricity per cubic foot, per year, compared to only five percent in 1990. The analysis also revealed that the larger the refrigerator, the greater the improvement in energy consumption.

The energy efficiency of dishwashers also improved dramatically – by 37 percent – during the review period. Clothes dryers and clothes washers were, respectively, 20 percent and 23 percent more energy efficient in 1997 than in 1990. Ranges remained virtually unchanged.

For more information on this report, contact Linda Yuen at (613) 995-2503 or by e-mail at lyuen@nrcan.gc.ca.





SUCCESS STORY

Champion Feed Services Ltd. Produces MORE with LESS

Champion Feed Services Ltd., an Industrial Energy Innovator, has been busy during the past two years improving energy efficiency, which has translated into energy cost savings at its six Alberta animal feed facilities.

In 1998, Champion Feed Services switched from an 80-hp to a 40-hp feed transportation system and replaced all motors up to 20 hp with high-efficiency models. The larger motors will be replaced when they are due for service. Champion reduced energy costs even further with a lighting retrofit in "The Back 40," the production mill's store.

Champion has been making several changes in its Alberta plants to increase production without increasing energy use – thereby reducing energy use per tonne of feed production.

In 1998, the company installed a steam enhancer in its pellet machine at Barrhead. By allowing reheated steam to be mixed with the product being pelleted, the steam enhancer has reduced the amperage required by 372 000 kW per year. Champion was so impressed by the savings that it installed a steam enhancer in its Westlock pellet machine in 1999 and plans to do the same with the pellet machine in Grande Prairie next year. "Not only does this save us power," states Champion general manager Reinhard Muhlenfeld, "but it also allows us to produce more feed."

We Want to *Hear from You!*

We hope that you've enjoyed this edition of *OEE News*. Future editions will provide even more information on how the OEE is "Leading Canadians to Energy Efficiency at Home, at Work and on the Road."

Our goal is to update you regularly on the OEE, its programs and initiatives. But we also want to hear from you.

If you have suggestions for articles, success stories or profiles, please let us know. Letters to the editor are also welcome. Your feedback will help us make *OEE News* an important and valued source of information on energy efficiency in Canada.

Send your correspondence to:

The Publisher, OEE News
Office of Energy Efficiency
Natural Resources Canada
580 Booth Street, 18th Floor
Ottawa ON K1A 0E4
Fax: (613) 947-2399
E-mail: oee.info@nrcan.gc.ca

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